



Europäisches
Patentamt

European
Patent Office

Office européen
des brevets

The European Patent Office

An introduction to the EPO and the European patent system with a look at CCMT



Contents

- **About us**
- Statistics
- Granting and publishing patents
- Quality patents
- Patents for the public
- Training and awareness-raising events
- The unitary patent
- Contact

Our mission

As the patent office for Europe, we support innovation, competitiveness and economic growth across Europe through a commitment to high quality and efficient services delivered under the European Patent Convention.



Our history

1973 ● Diplomatic Conference in Munich

5 October 1973 ● Signature of the European Patent Convention (EPC) by 16 countries

1977 ● Entry into force of the EPC in seven countries
● Founding of the European Patent Organisation
● Founding of the European Patent Office

2013 ● Celebration of 40 years of the EPC

2017 ● Celebration of 40 years of the EPO

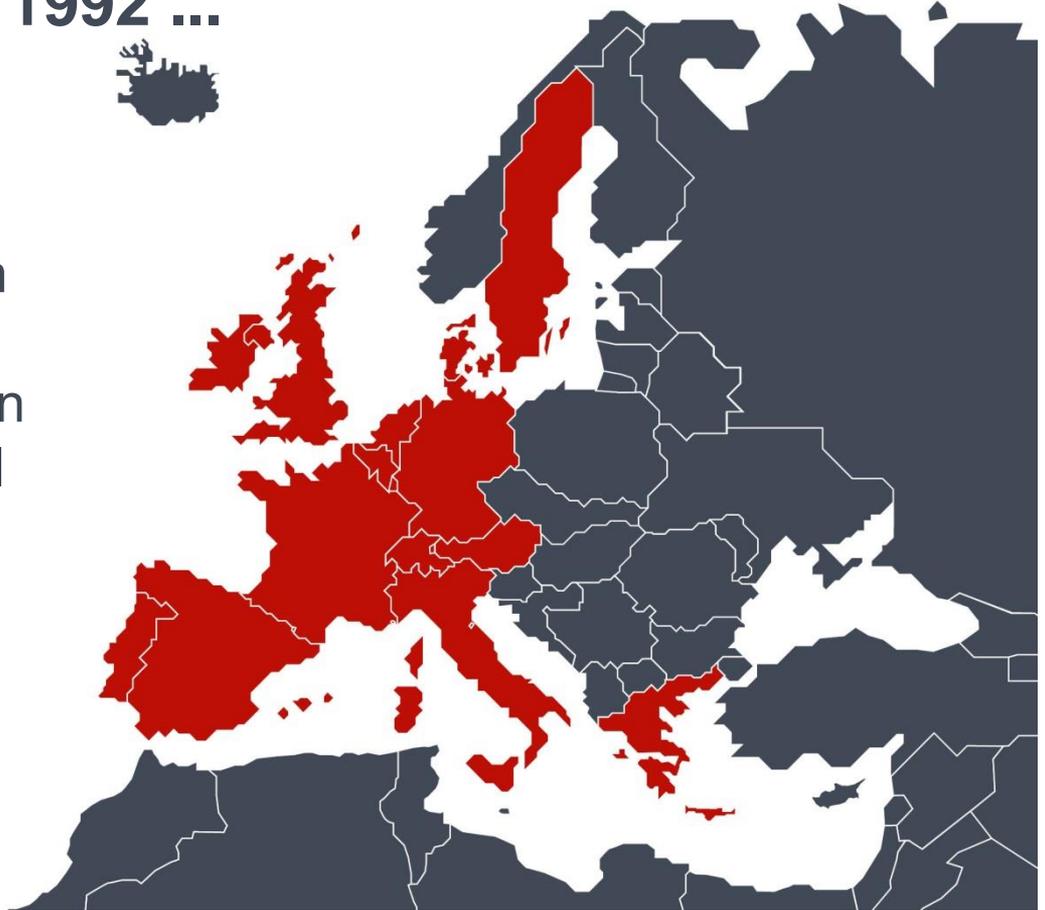
Seven founding states in 1977

Belgium • Germany • France
Luxembourg • Netherlands
Switzerland • United Kingdom



... 17 member states in 1992 ...

Belgium • Germany • France
Luxembourg • Netherlands
Switzerland • United Kingdom
Sweden • Italy • Austria
Liechtenstein • Greece • Spain
Denmark • Monaco • Portugal
Ireland



... 32 member states in 2007 ...

Belgium • Germany • France
Luxembourg • Netherlands
Switzerland • United Kingdom
Sweden • Italy • Austria
Liechtenstein • Greece • Spain
Denmark • Monaco • Portugal
Ireland • Finland • Cyprus
Turkey • Bulgaria • Czech Republic
Estonia • Slovakia • Slovenia
Hungary • Romania • Poland
Iceland • Lithuania • Latvia
Malta



Today ... an area with some 700m inhabitants

38 European member states

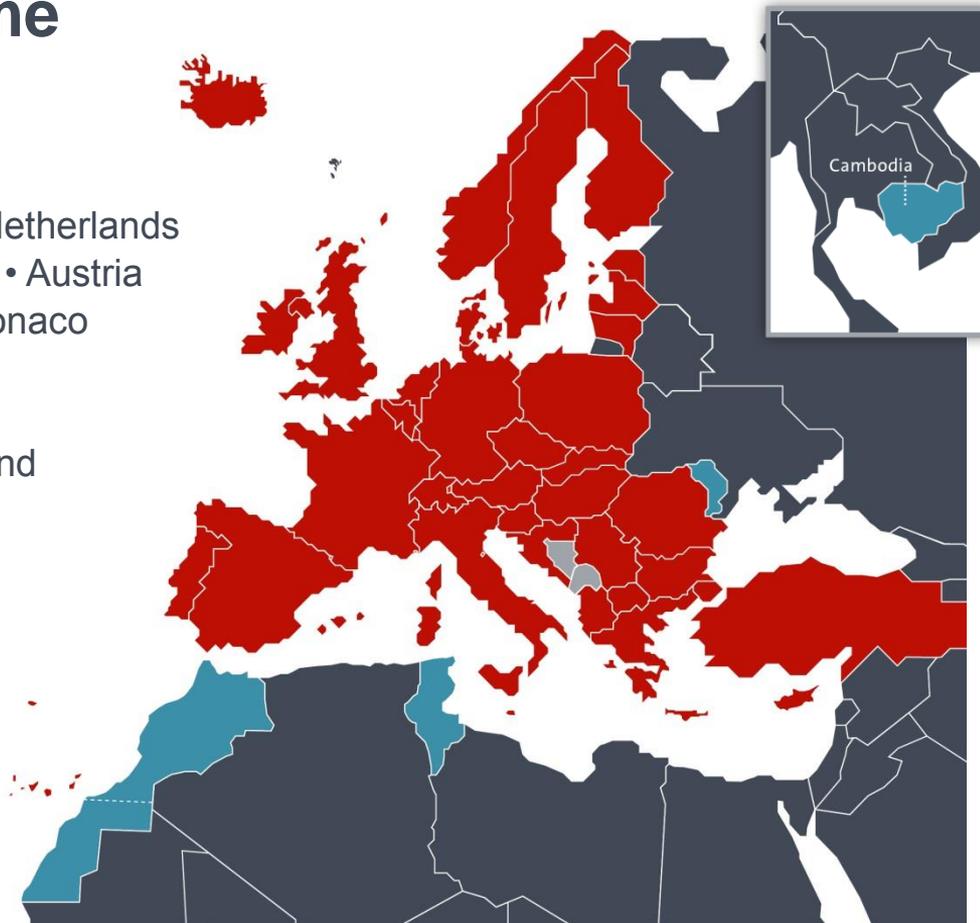
Belgium • Germany • France • Luxembourg • Netherlands
Switzerland • United Kingdom • Sweden • Italy • Austria
Liechtenstein • Greece • Spain • Denmark • Monaco
Portugal • Ireland • Finland • Cyprus • Turkey
Bulgaria • Czech Rep. • Estonia • Slovakia
Slovenia • Hungary • Romania • Poland • Iceland
Lithuania • Latvia • Malta • Croatia • Norway
Former Yugoslav Rep. Macedonia
San Marino • Albania • Serbia

Two European extension states

Bosnia and Herzegovina • Montenegro

Four validation states

Republic of Moldova • Morocco • Tunisia
Cambodia



Our status

- **Second-largest intergovernmental institution** in Europe
- Not an EU institution
- **Self-financing**, i.e. revenue from fees covers operating and capital expenditure



Structure of the European Patent Organisation

European Patent Organisation

Administrative Council

The legislative body

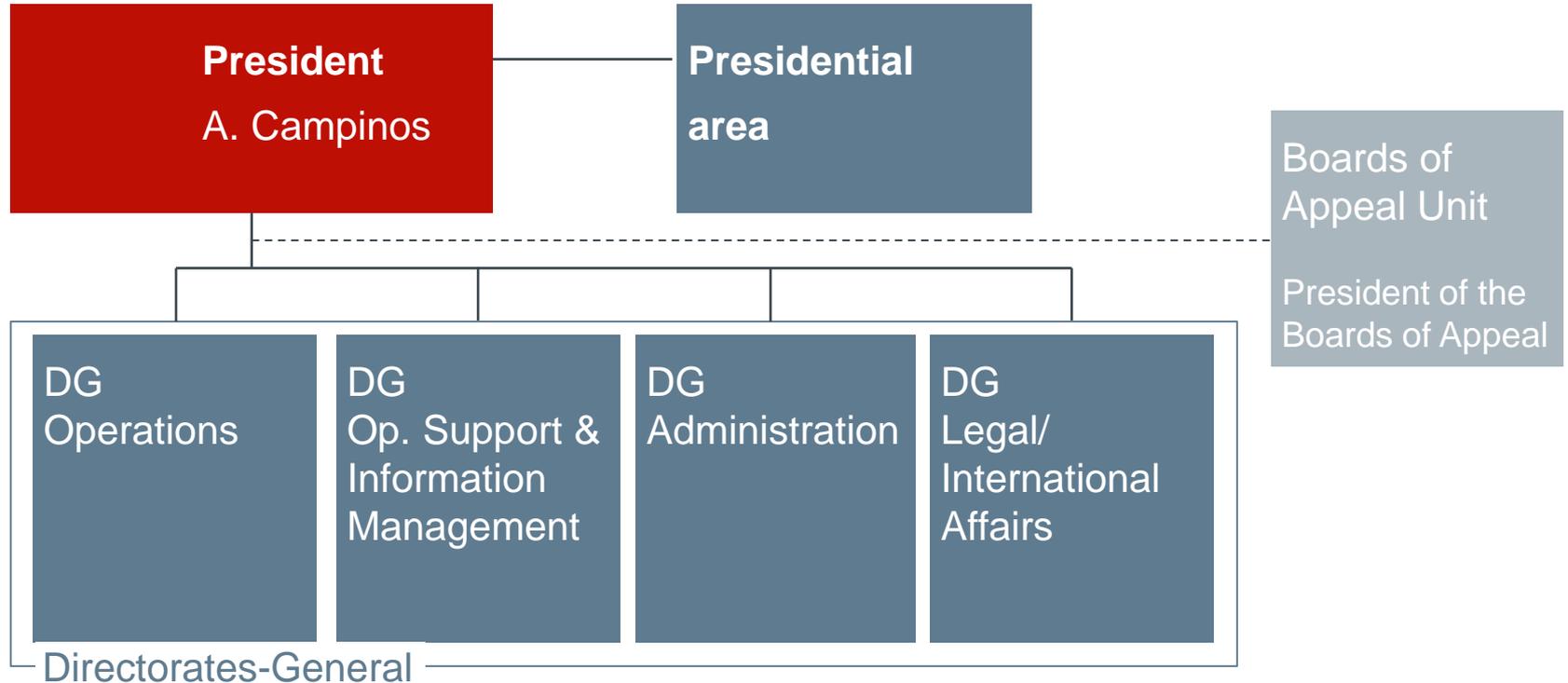
- is made up of representatives of the member states
- supervises the activities of the Office
- appoints the President
- votes on the Office's budget
- supervises the activities of the Boards of Appeal Unit

European Patent Office

The executive body

- is responsible for searching, examining and publishing patent applications
- is responsible for holding opposition proceedings
- appeal proceedings are the responsibility of the Boards of Appeal Unit

Structure of the European Patent Office



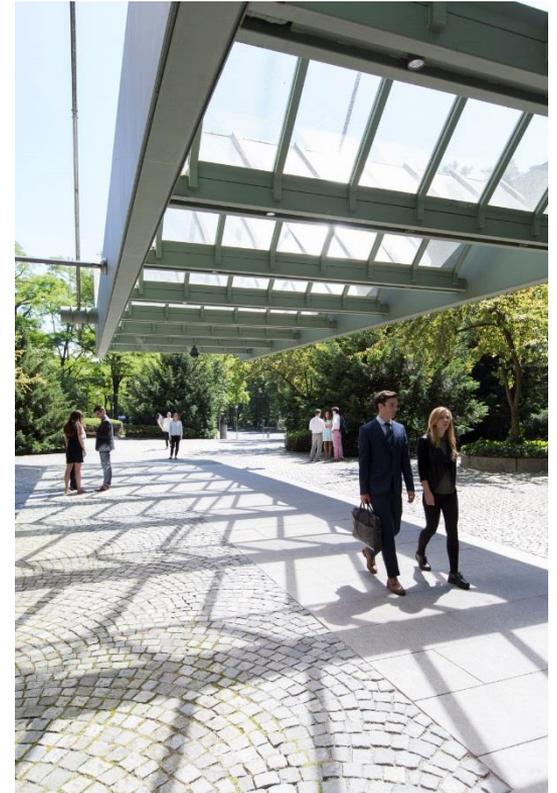
Our five locations in Europe



Our staff

Munich	3 806
The Hague	2 708
Berlin	239
Vienna	93
Brussels	4
Total	6 850

64% are patent examiners



Source: EPO data on June 2018.

A multicultural working environment

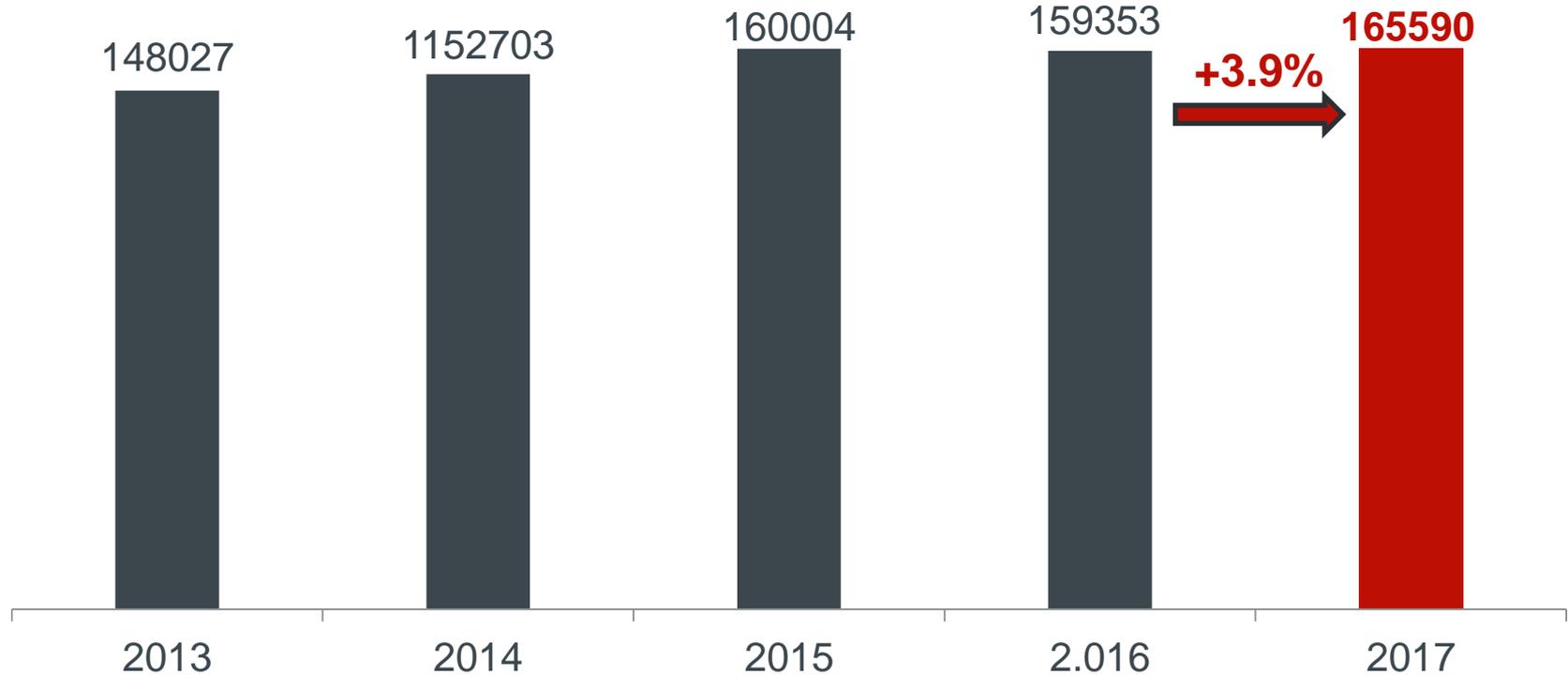
- 35 different nationalities
- Three languages for working in and for communicating with applicants:
 - English (EN)
 - French (FR)
 - German (DE)



Contents

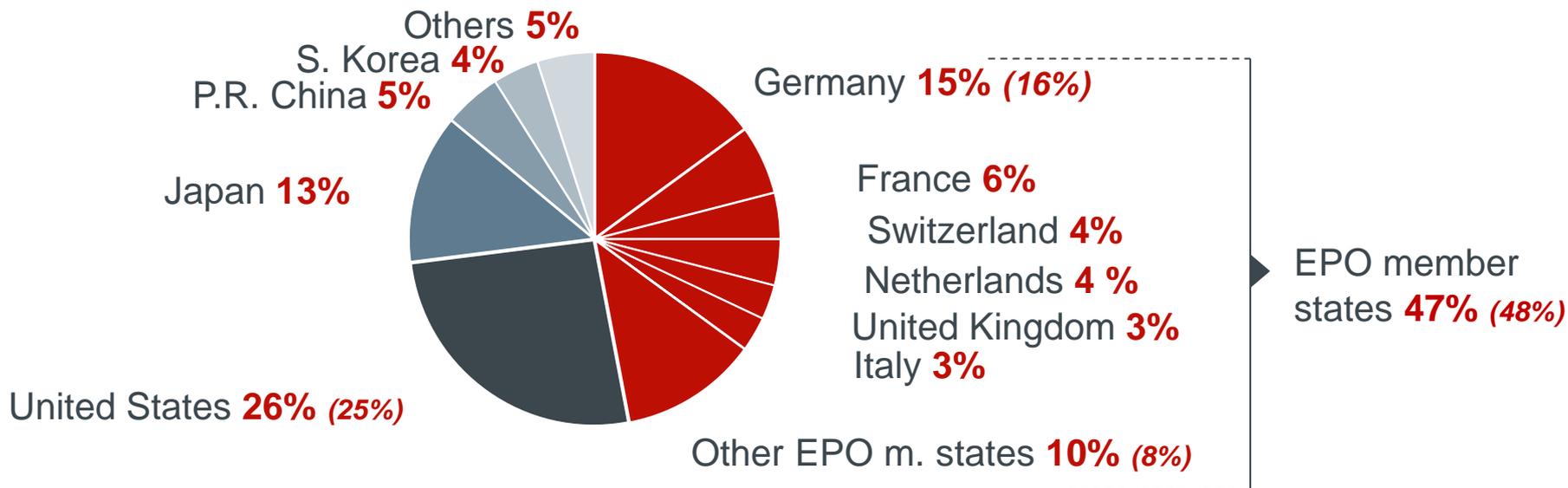
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Growth of European patent applications



Applications are the files for which applicants have decided to request a European patent from the EPO. They are a direct measure of the explicit interest of innovating firms to assert their patent rights on the European technology market (Direct European applications and international (PCT) applications entering the European phase).

Origin of European patent applications in 2017 (2016)



Analysis based on European patent applications filed with the EPO (Direct European applications and international (PCT) applications entering the European phase).

Statistics are based on the first-named applicant.

EPO: the 38 member states of the European Patent Organisation, including EU28

Top EPO applicants in 2016...

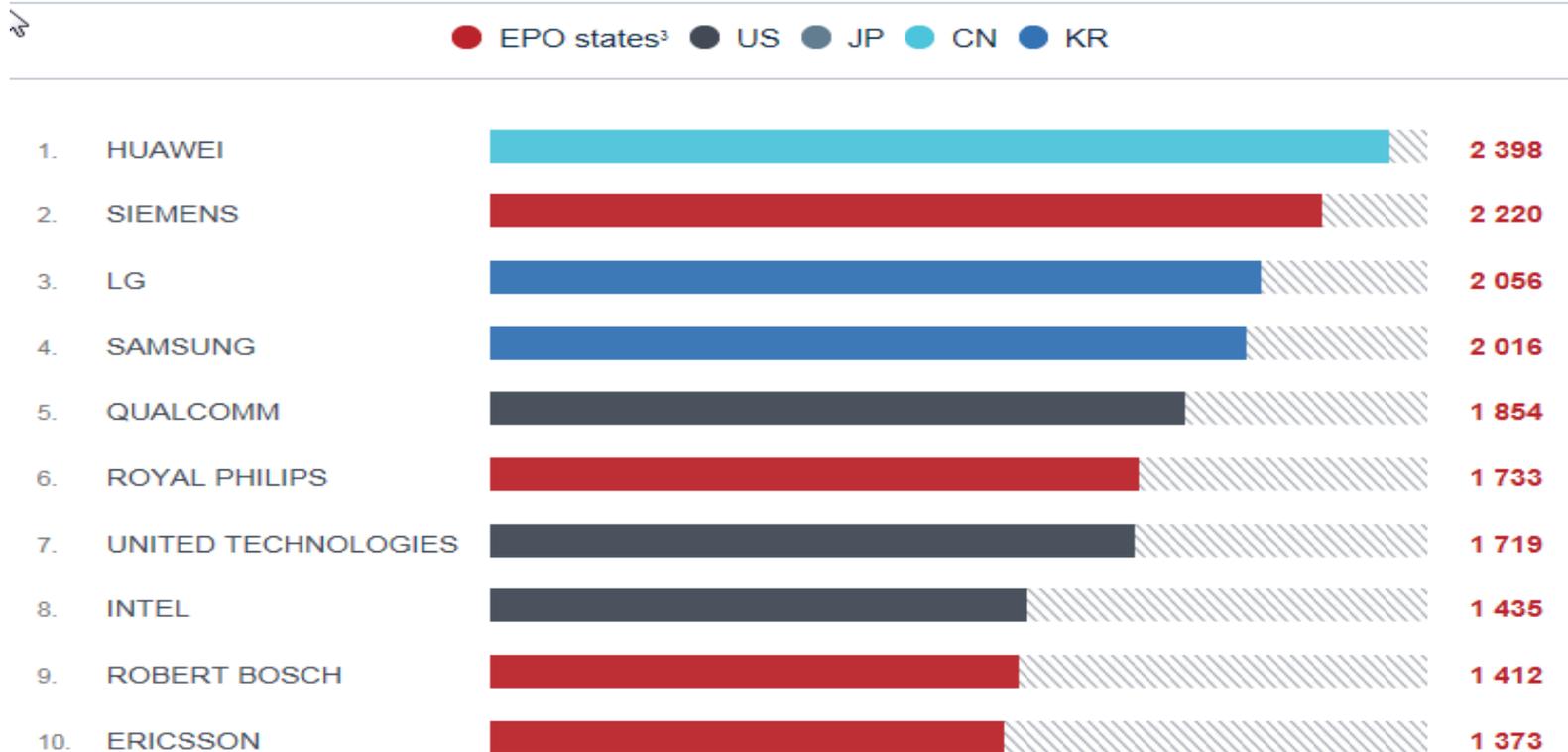
TOP 10

		2016	Change	
1	Philips (6)	2 568	6.9%	↗
2	Huawei (1)	2 390	22.4%	↗
3	Samsung (4)	2 316	-2.1%	↘
4	LG (3)	2 313	10.6%	↗
5	United Technol. (7)	2 067	10.6%	↗
6	Siemens (2)	1 871	-1.2%	↘
7	Qualcomm (5)	1 704	-0.1%	↘
8	GE (Intel)	1 628	21.5%	↗
9	BASF (R. Bosch)	1 410	1.9%	↗
10	Robert Bosch (Ericss.)	1 327	-11.1%	↘

● EPO member states
 ● United States
 ● S. Korea
 ● P.R. China

Analysis based on European patent applications filed with the EPO (Direct European applications and international (PCT) applications entering the European phase). Statistics are based on the first-named applicant.

...And in 2017



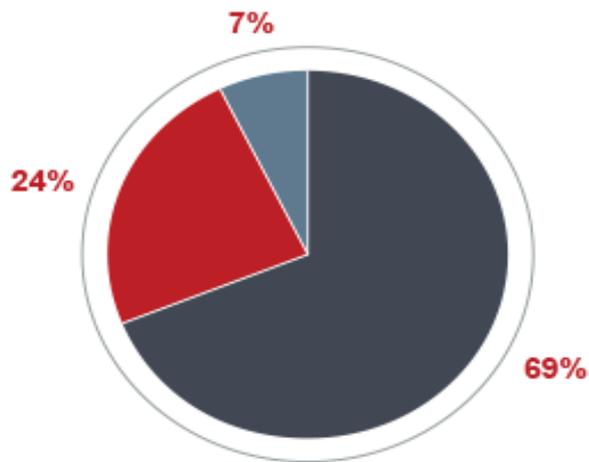
Technical fields with the most applications in 2017

		2017	Change
1	Medical technology	13 090	6.2% 
2	Digital communication	11 694	5.7% 
3	Computer technology	11 174	4.1% 
4	El. machinery, apparatus, energy	10 402	4.0% 
5	Transport	8 217	- 4.2% 
6	Measurement	7 999	6.6% 
7	Organic fine chemistry	6 462	4.3% 
8	Pharmaceuticals	6 330	8.1% 
9	Biotechnology	6 278	14.5% 
10	Other special machines ranging from agriculture to 3D printing	5 548	0.4% 

Category of applicants

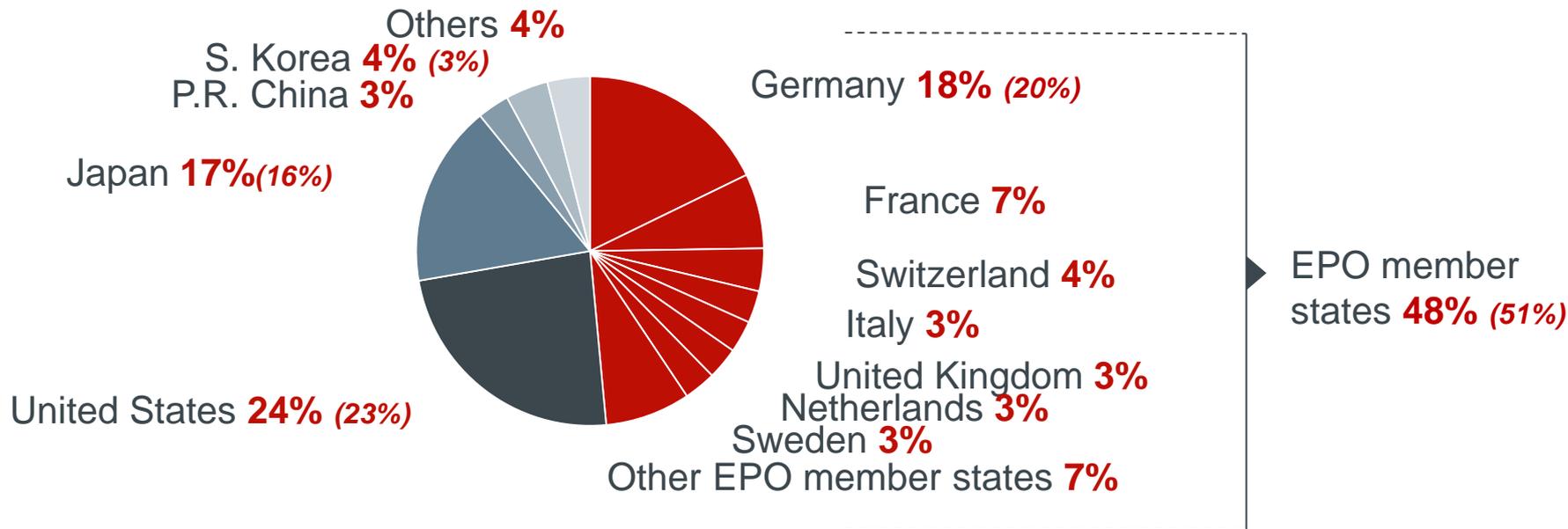
Shares in applications¹

A breakdown by category of applicants requesting services from the EPO shows that 69% of them were large companies, 24% were SMEs and individual inventors, and 7% were universities and public research institutes. This shows that a significant proportion of applicants at the EPO are smaller entities.



	2017	2016
● Large enterprises	69%	66%
● SMEs ² , individual inventors	24%	28%
● Universities and public research	7%	6%

Granted patents in 2017 (2016)



Analysis based on granted patents published in 2017. Statistics are based on the first-named patentee.

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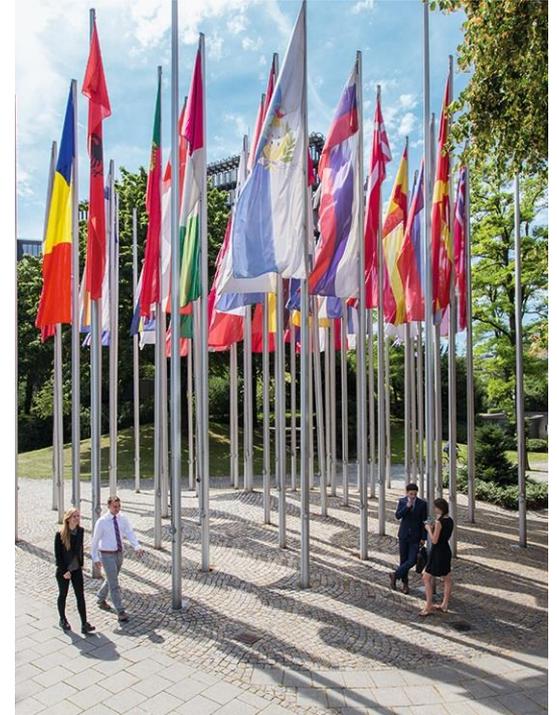
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The role of the EPO in the European grant procedure (1)

We provide patent protection:

- in up to 38 EPO member states, two extension and four validation states based on a single application
- in one of the three official languages (English, French, German)

We make all patent documents available to the public.



The role of the EPO in the European grant procedure (2)

We are also responsible for:

- limitation and revocation by patentees
- opposition by third parties
- appeal proceedings before the Boards of Appeal



The EPO also processes international applications (1)

For international (PCT) applications,
we act as a:

- Receiving Office (RO)
- Designated Office (DO)
- International Searching Authority (ISA)
- Supplementary International Searching Authority (SISA)
- International Preliminary Examining Authority (IPEA)



The EPO also processes international applications (2)

We carry out approximately:

- **34%** of all international search procedures
- **63%** of all international preliminary examinations

We deliver the international search report accompanied by a written opinion **within three months**.¹



¹ From the date of receipt of the application by the International Searching Authority.

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From the Athens conference 2017/1

- **A granted patent after high quality examination**

- **Challenges**
 - 1. Cost, especially to cover all EU countries
 - **2. Long time for first grant**
 - 3. Some countries are slow or unlikely to grant
 - 4. Too long time for invalidation decision

From the Athens conference 2017/2

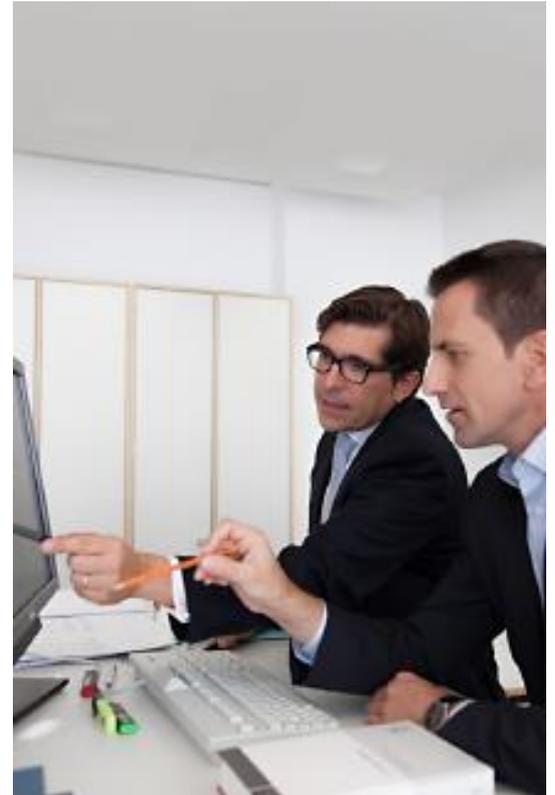
EPO's Chief Economist:

- Europe is world leader in CCMT innovation
- Europe has a leading position in almost all CCMT fields, with different profiles of specialisation across EU countries
- **Patents play an instrumental role in the diffusion of CCMT inventions, within the single market and beyond.**

- High quality and timely patents are essential!

Key components of the EPO's patent quality policy

- Highly **skilled examiners**
- Decisions taken **by a team of three examiners**
- State-of-the-art searches
- Thorough **procedures** and **review** processes
- Quality **controls** and an **ongoing** commitment to **improvement**



Highly skilled examiners

- **Top-level engineers and scientists**
 - high degree of technical expertise and personal responsibility
 - knowledge of the EPO's three official languages
- **Training during first two years**
 - extensive legal and procedural training
 - individual coaching by experienced examiners
- **Continuing professional development throughout career**



State-of-the-art searches

- **World's largest collection of documents**
 - 1 billion records of patent, non-patent literature and other sources incl. 50 million records from Asia
 - databases updated daily
- **High-performance EPOQUE search tool**
 - used by examiners
 - a worldwide benchmark
 - used by 47 patent offices, including Australia, Brazil and China
- **Machine translation to extend the range of easily accessible information**



Thorough procedures and review processes (1)

- **Single procedure**

- The EPC provides the legal framework for the granting procedure.



- **Systematic approach**

- Each application is examined by a division of three technically qualified examiners.



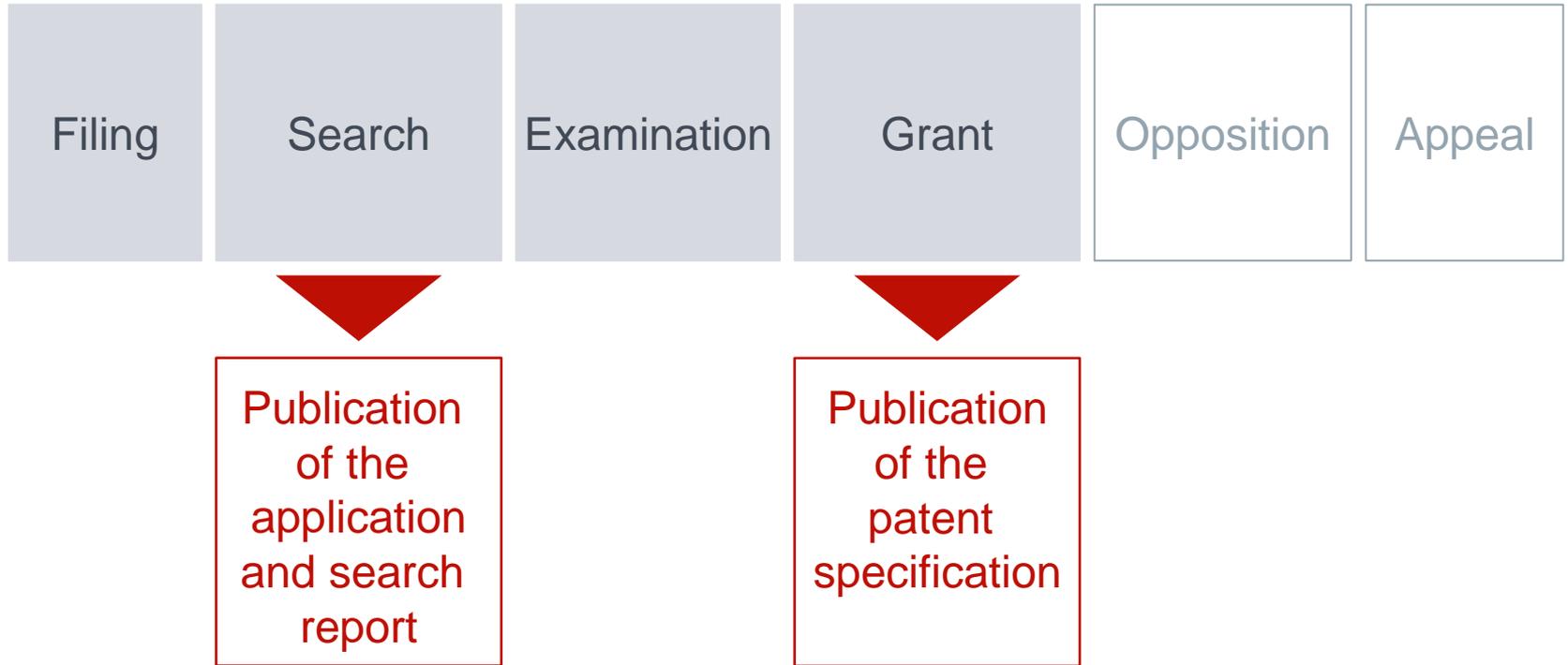
Thorough procedures and review processes (2)

- **Review processes**

- **Oppositions** are examined by three technically qualified examiners, at least two of whom will not have been involved in the grant proceedings for the patent.
- **Appeals** are heard by an independent second-instance judiciary (boards of appeal).



Basic steps in the European grant procedure



Early Certainty across all processes

- **Search**

Prior art search & written opinion within **6 months**

- **Examination**

Grants (up to IGRA) on average within **12 months**

- **Opposition** Standard Opposition within **15 months**

Early Certainty ... from Examination - goals

Step-by-step move to get there by 2020

Goal → 12 months on average

between valid examination request and proposal
for grant published in file inspection

Overall Duration	Goal
✓ EP direct (1 st and 2 nd filings)	36 months
✓ E-PCT (EPO is ISA)	49 months
✓ E-PCT (EPO is not ISA)	61 months
✓ Divisional applications	24 months

Examination requirements

- Patentability issues
- Novelty
- Non Unity
- Inventive step
- Art. (123(2) EPC)
- Clarity / sufficiency of disclosure

CCMT applications: possible challenges in examination

1) Green effect claimed as **combination** of several known elements:

- “and/or” claims, with proliferation of alternatives
Non-Unity (Multiple combinations).

- Green effect unclear or not fully disclosed.

Challenges in Examination

2) Inventions violating physical laws (e.g. perpetuum mobile, self-generating energy)

- Lack of disclosure (Art 83).
- Non patentability (Art 52, 53).
- Non industrial applicability.
- Non Searchable subject matter.
- Lack of novelty, when possible.
- Evidence may be asked.

Challenges in Examination

- 3) Inventions theoretically **feasible but out-of-reach** for the actual technical possibilities (controlling global climate, transferring air masses through different regions)
- Lack of enabling disclosure
 - Lack of industrial applicability

Challenges in Examination

4) Inventive merit difficult to assess when related to a “green outcome” (e.g. saving fuel by a quicker control, increasing yield by a design shape).

- Check that the effect is indeed due to the claimed feature

Challenges in Examination

5) Lack of clarity

- Claims to business or social objective, e.g. well-being of communities, energy independence.
 - possible objection: missing essential features
- Approximate expressions like "substantially zero energy cycle", "large enough to reduce the emissions"
 - Should be more clearly defined

Quality controls and commitment to improvement

- **Guidelines and instructions** for examiners
- **Spot-checks** on search reports and examination quality
- **Internal quality audits**
- **ISO 9001 certified Quality Management System**
for the entire patent process



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What information do patent documents contain?

- **Title** of the invention, name of the inventor
- **Detailed description of the invention:** how it is constructed, how it is used, benefits compared with what already exists
- **Claims** providing a precise definition of what the patent protects
- **Drawings**
- **Abstracts:** summary of the invention – particularly useful for search engines

(19)  **European Patent Office**
Office européen des brevets

(11) **EP 1 741 472 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication: 10.01.2007 Bulletin 2007/02 (51) Int. Cl.: A62B 17/00 (2006.01) A41D 13/00 (2006.01)

(21) Application number: 06122326.5 (22) Date of filing: 15.02.2001

(84) Designated Contracting States: DE FR GB IT

(30) Priority: 03.03.2000 US 517919

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 01912744.8 / 1 259 294

(71) Applicant: LION APPAREL, INC.
Dayton, OH 45413-0576 (US)

(72) Inventor:
Aldridge, Donald
New Carlisle, OH 45344 (US)

(74) Representative: Asquith, Julian Peter
Marks & Clerk,
4200 Wash Court,
Oxford Business Park South
Oxford OX4 2RU (GB)

Remarks:
This application was filed on 16 - 10 - 2006 as a divisional application to the application mentioned under INVD code 02.

(54) **Firefighting garment**

(57) A protective garment comprises an outer shell of an abrasion, flame and heat resistant material; a thermal barrier/moisture barrier composite positioned between the outer shell and a weaver of the garment; the thermal barrier/moisture barrier composite including a substantially liquid-impermeable membrane bonded to one surface of a heat and flame resistant fabric substrate, and a first layer of heat and flame resistant insulating material attached to an opposite surface of the fabric substrate; a face cloth positioned between the thermal barrier/moisture barrier composite and a weaver of the garment; and a second layer of heat and flame resistant insulating material attached to the face cloth and positioned between the thermal barrier/moisture barrier composite and face cloth.

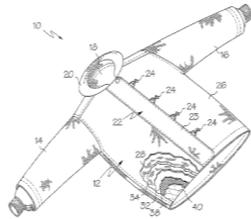


FIG. 1

Printed by Jouve, 7502 PARIS (FR)

EP 1 741 472 A2

The public can use patent documents to ...

- **find out** what technology already exists and build on it
- **keep track** of what other inventors and companies are doing
- **avoid** infringing other people's patent rights
- **check out** where an invention is patented, and where it is not
- CCMT: anything special? You already know...

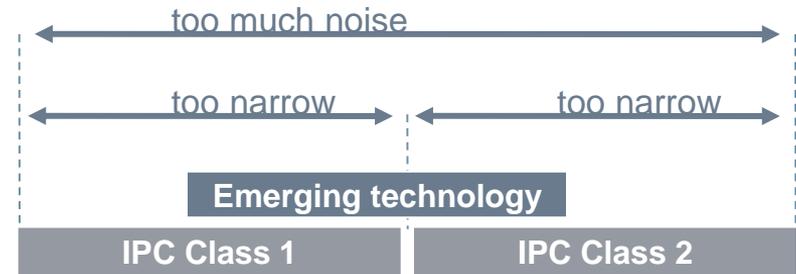


Y02 solving the limitations of current IPC and CPC

CCM technologies tend to span over a number of different IPC classification sections.

Therefore, if using only the standard classification systems IPC or CPC risks are

- 1) too much noise
- 2) missing relevant info



All patent documents are accessible free of charge on epo.org

Espacenet

Over 100 million patent documents, easily searchable

Patent Translate

Automatic translation between English and 31 other languages, including Chinese, Japanese, Korean and Russian

The screenshot shows the EPO website homepage. At the top left is the EPO logo with the text 'Europäisches Patentamt', 'European Patent Office', and 'Office européen des brevets'. To the right is a search bar and buttons for 'Website' and 'Patents'. Further right are links for 'Media', 'Contact us', and a language dropdown set to 'English'. Below this is a dark navigation bar with links: 'Home', 'Searching for patents', 'Applying for a patent', 'Law & practice', 'News & issues', 'Learning & events', and 'About us'. The main content area features a large banner for 'EPO inaugurates new premises in The Hague' with a 'Read more' button. Below the banner are three smaller tiles: 'New EPO site The Hague', 'Quality Report 2017', and 'Achievements 2010-2018'. On the left side, there is a vertical menu under 'Searching for patents' with options: 'European Patent Register', 'European Publication Server', 'Espacenet - patent search', and 'Patent Translate'. Below this menu are sections for 'Applying for a patent', 'Law & practice', and 'Boards of Appeal'. At the bottom, there are four small tiles: 'PCT at the EPO Stockholm, Sweden 9 September 2018 Register now', 'Data protection at the EPO GDPR enters into force', 'Innovation, space technologies and patents conference 8 October, Luxembourg Register now', and 'Access online services' with a dropdown menu.

Key facts about Espacenet

- Most visited area of our website:
20 million visits every year
- A **worldwide collection** of patent data
- For **beginners and experts**
- Automatic translation of documents
between English and 31 other languages,
including Chinese, Japanese, Korean
and Russian

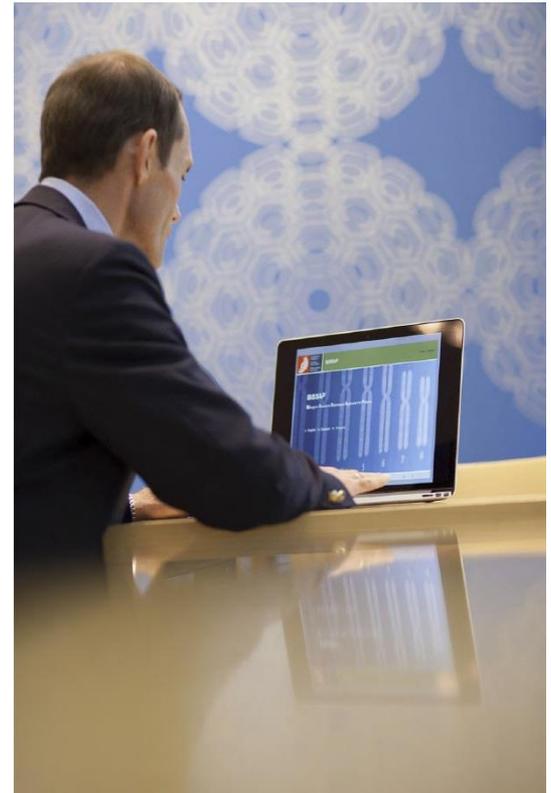
The logo for Espacenet, featuring the word "Espacenet" in a bold, sans-serif font. The "E" is red, and the rest of the letters are dark grey.

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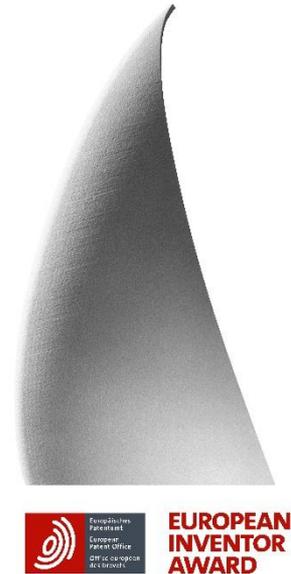
Training organised by the European Patent Academy

- **Training on IP and our services and tools for**
 - applicants and attorneys
 - judges
 - patent office staff
 - universities and research centres
 - businesses and SMEs
- **An extensive collection of free e-learning materials on**
epo.org/learning



Raising awareness – European Inventor Award

- Honours **outstanding inventors**
- **Five categories** and an **international jury** of experts
- **Popular Prize**
- Held each year in a different city in Europe
- **14th edition** in June 2019



▶ **A major event with worldwide media impact**

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Objectives of the Unitary Patent package



Simplified
and broader
patent
protection
in Europe at
lower cost



Provides **better value** with **reduced complexity**



Facilitates access to patent protection for
SMEs, universities and **public research centres**



Makes **Europe more attractive** for innovation
and investors



Boosts Europe's **competitiveness**

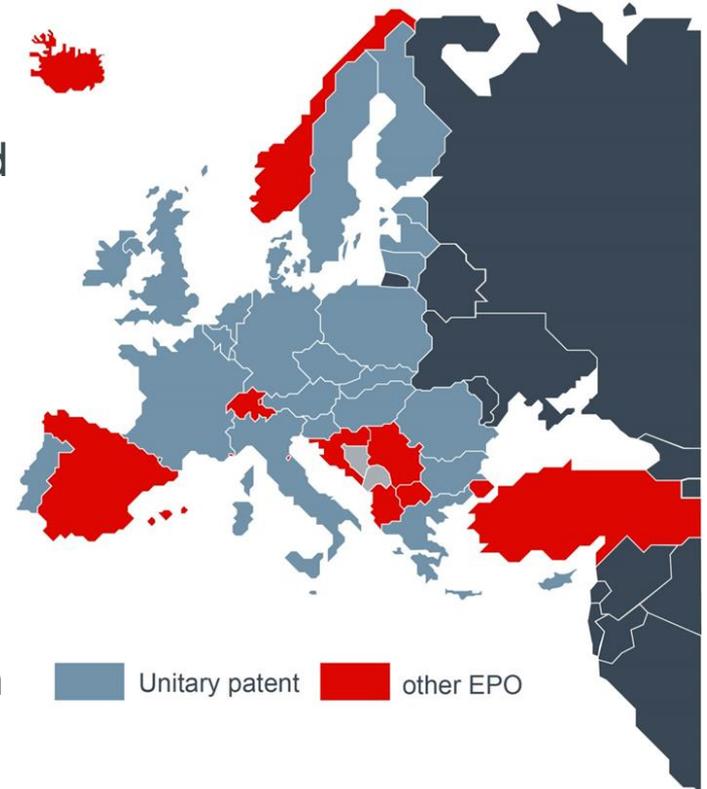
The unitary patent and the EPO member states

Unitary patent states

Austria • Belgium • Bulgaria • Cyprus
Czech Republic • Denmark • Estonia • Finland
France • Germany • Greece • Hungary
Ireland • Italy • Latvia • Lithuania
Luxembourg • Malta • Netherlands • Poland
Portugal • Romania • Slovakia • Slovenia
Sweden • United Kingdom

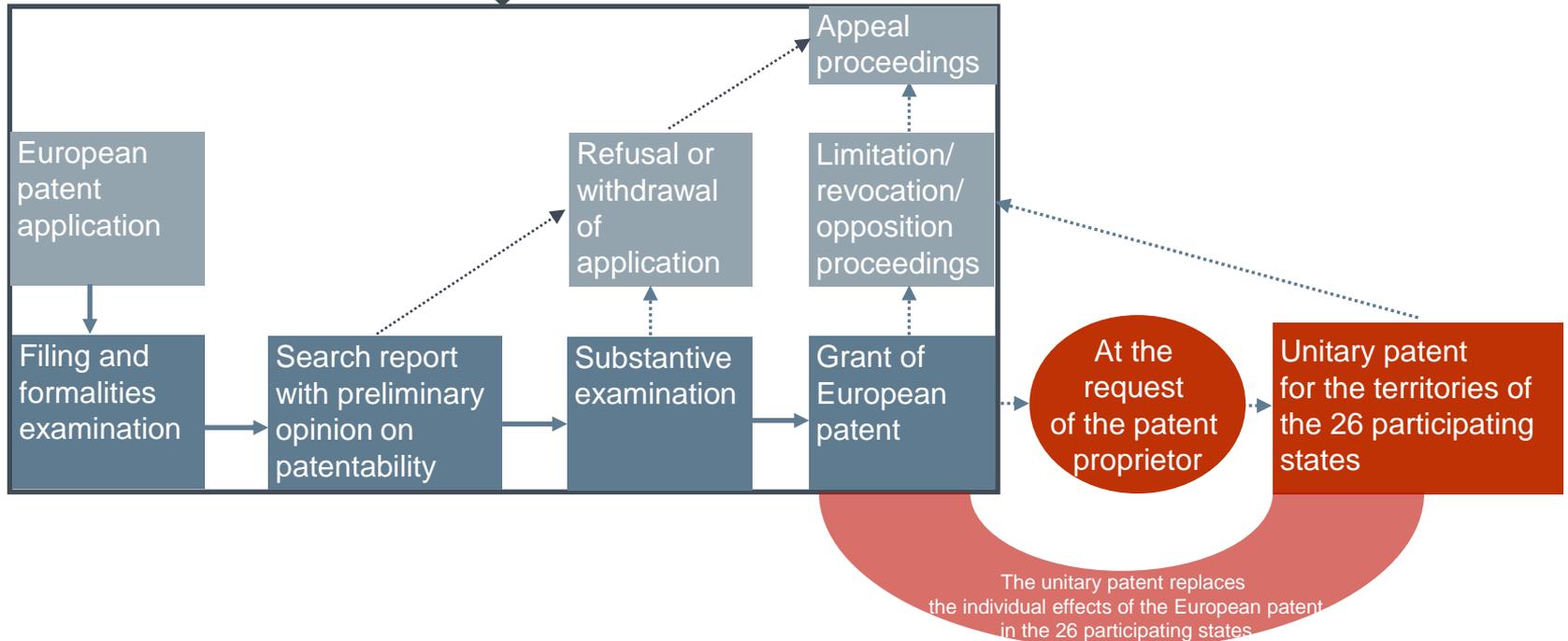
Other EPO member states

Spain • Iceland • Switzerland • Norway
Turkey • Monaco • San Marino • Liechtenstein
Croatia • Serbia • Albania • Former Yugoslav
Republic of Macedonia



The European patent with unitary effect

Same grant procedure as for classic European patent



Concrete benefits

- Protection in **one single step** for the 26 states currently participating
- **Simplified registration** procedure instead of 26 different validations
- **Simplified and cost-effective** renewal fee payment
- **No post-grant translation** required (after initial transition period)
- **Centralised register** maintained by the EPO
- **Uniform litigation system** affording greater legal certainty

When will it start?

- The EPO is ready
- Minimum of 13 states – including United Kingdom, France and Germany – must ratify the UPC Agreement
- 16 states including France and United Kingdom, but not yet Germany have ratified the UPC Agreement so far (Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Portugal, Sweden, and UK).

Thanks for listening!

eluzzatto@epo.org

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